

FORM PTO-1390 (Modified)  
(REV 11-98)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A FILING UNDER 35 U.S.C. 371

206332US2PCT

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR

09/807412

INTERNATIONAL APPLICATION NO.  
PCT/EP99/07750

INTERNATIONAL FILING DATE  
14 October 1999

PRIORITY DATE CLAIMED  
19 October 1998

TITLE OF INVENTION

PROCESS FOR SOLIDIFYING THE SURFACE OF RAW SAUSAGE EMULSION BY ULTRASONIC TREATMENT

APPLICANT(S) FOR DO/EO/US

Fritz KORTSCHACK, et al.

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371 (c) (2))
  - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☒ has been transmitted by the International Bureau.
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☒ A copy of the International Search Report (PCT/ISA/210).
8. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))
  - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☐ have been transmitted by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☒ have not been made and will not be made.
9. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
10. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).
11. ☐ A copy of the International Preliminary Examination Report (PCT/IPEA/409).
12. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).

Items 13 to 20 below concern document(s) or information included:

13. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
14. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
15. ☐ A **FIRST** preliminary amendment.
16. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
17. ☐ A substitute specification.
18. ☐ A change of power of attorney and/or address letter.
19. ☐ Certificate of Mailing by Express Mail
20. ☒ Other items or information:

Request for Consideration of Documents Cited in International Search Report  
Notice of Priority  
PCT/IB/304

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR 1.492) <b>09/807412</b>		INTERNATIONAL APPLICATION NO. <b>PCT/EP99/07750</b>		ATTORNEY'S DOCKET NUMBER <b>206332US2PCT</b>	
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21. The following fees are submitted: <b>BASIC NATIONAL FEE ( 37 CFR 1.492 (a) (1) - (5) ) :</b>				<b>CALCULATIONS PTO USE ONLY</b>	
<input type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO ..... <b>\$1,000.00</b>					
<input checked="" type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO ..... <b>\$860.00</b>					
<input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... <b>\$710.00</b>					
<input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... <b>\$690.00</b>					
<input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) ..... <b>\$100.00</b>					
<b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b>				<b>\$860.00</b>	
Surcharge of <b>\$130.00</b> for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input checked="" type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492 (e)).				<b>\$130.00</b>	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	- 20 =	0	x \$18.00	<b>\$0.00</b>	
Independent claims	- 3 =	0	x \$80.00	<b>\$0.00</b>	
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>				<b>\$0.00</b>	
<b>TOTAL OF ABOVE CALCULATIONS =</b>				<b>\$990.00</b>	
Reduction of 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28) (check if applicable) <input type="checkbox"/>				<b>\$0.00</b>	
<b>SUBTOTAL =</b>				<b>\$990.00</b>	
Processing fee of <b>\$130.00</b> for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492 (f)).				<b>\$0.00</b>	
<b>TOTAL NATIONAL FEE =</b>				<b>\$990.00</b>	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (check if applicable) <input type="checkbox"/>				<b>\$0.00</b>	
<b>TOTAL FEES ENCLOSED =</b>				<b>\$990.00</b>	
				<b>Amount to be:</b>	\$
				<b>refunded</b>	\$
				<b>charged</b>	\$


☒ A check in the amount of **\$990.00** to cover the above fees is enclosed.

☐ Please charge my Deposit Account No. \_\_\_\_\_ in the amount of \_\_\_\_\_ to cover the above fees.  
 A duplicate copy of this sheet is enclosed.

☒ The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. **15-0030** A duplicate copy of this sheet is enclosed.

**NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.**

SEND ALL CORRESPONDENCE TO:



**22850**

Surinder Sachar  
Registration No. 34,423

*Surinder Sachar*

SIGNATURE

**Marvin J. Spivak**

NAME

**24,913**

REGISTRATION NUMBER

*April 19 2001*

DATE

to Rec'd PCT/PTO 7 6 AUG 2001

09/807412

206332US-2 PCT



IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF:

:

FRITZ KORTSCHACK ET AL

: ATTN: APPLICATION DIVISION

SERIAL NO: 09/807,412

:

FILED: 19 April 2001

: EXAMINER:

FOR: METHOD FOR HARDENING THE :  
SURFACE OF SAUSAGE MEAT  
USING ULTRASONIC  
TREATMENT

PRELIMINARY AMENDMENT

ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231

SIR:

Prior to a first examination on the merits, please amend the above-identified  
application as follows:

IN THE SPECIFICATION

Please amend the specification as follows:

Page 1, before line 1, delete the title of the invention in its entirety, and insert  
therefor:

METHOD FOR HARDENING THE SURFACE OF SAUSAGE MEAT USING  
ULTRASONIC TREATMENT

09/807412-083001

IN THE CLAIMS

Please amend Claims 4, 5, and 7 as follows:

4. (Amended) Process according to claim 1, characterized in that the raw product is subjected to a synchronous treatment with liquid smoke or other flavourings or decorations.

5. (Amended) Process according to Claim 1, characterized in that the raw product is subjected to a downstream treatment with liquid smoke or other flavourings or decorations.

7. (Amended) Process according to Claim 2, characterized in that the surface of the sonotrode to be contacted with the raw product has an adhesion-minimizing microstructure or a structured coating of this type.

Please add new Claims 8-15 as follows:

8. (New) Process according to claim 2, characterized in that the raw product is subjected to a synchronous treatment with liquid smoke or other flavourings or decorations.

9. (New) Process according to claim 3, characterized in that the raw product is subjected to a synchronous treatment with liquid smoke or other flavourings or decorations.

10. (New) Process according to Claim 2, characterized in that the raw product is subjected to a downstream treatment with liquid smoke or other flavourings or decorations.

11. (New) Process according to Claim 3, characterized in that the raw product is subjected to a downstream treatment with liquid smoke or other flavourings or decorations.

12. (New) Process according to Claim 3, characterized in that the surface of the sonotrode to be contacted with the raw product has an adhesion-minimizing microstructure or a structured coating of this type.

13. (New) Process according to Claim 4, characterized in that the surface of the sonotrode to be contacted with the raw product has an adhesion-minimizing microstructure or a structured coating of this type.

14. (New) Process according to Claim 5, characterized in that the surface of the sonotrode to be contacted with the raw product has an adhesion-minimizing microstructure or a structured coating of this type.

15. (New) Process according to Claim 6, characterized in that the surface of the sonotrode to be contacted with the raw product has an adhesion-minimizing microstructure or a structured coating of this type.

#### REMARKS

Favorable consideration of this application, as presently amended, is respectfully requested.

The present preliminary amendment is submitted to place the above-identified application in more proper format under United States practice. By the present preliminary amendment Claims 4, 5, and 7 have been amended to no longer recite any multiple dependencies. Further, the subject matter of the cancelled multiple dependencies is now set forth in new dependent Claims 8-15.

The present application is believed to be in condition for a full and thorough examination on the merits. An early and favorable consideration of the present application is hereby respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



Gregory J. Maier  
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**Marked-Up Copy**  
Serial No: 09/807,412  
Amendment Filed on:  
08/30/01

IN THE SPECIFICATION

Page 1, before line 1, delete the title of the invention in its entirety, and insert therefor:

--METHOD FOR HARDENING THE SURFACE OF SAUSAGE MEAT USING  
ULTRASONIC TREATMENT--

IN THE CLAIMS

Please amend Claims 4, 5, and 7 as follows:

--4. (Amended) Process according to [one of the preceding claims] claim 1, characterized in that the raw product is subjected to a synchronous treatment with liquid smoke or other flavourings or decorations.

5. (Amended) Process according to [one of] Claim[s] 1 [to 3], characterized in that the raw product is subjected to a downstream treatment with liquid smoke or other flavourings or decorations.

7. (Amended) Process according to [one of] Claim[s] 2 [to 6], characterized in that the surface of the sonotrode to be contacted with the raw product has an adhesion-minimizing microstructure or a structured coating of this type.

Claims 8-15 (New).

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JC03 Rec'd PGT/PTO 19 APR 2001

Process for solidifying the surface of raw sausage  
emulsion by ultrasonic treatment

Description

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The invention relates to a process for solidifying the surface of raw sausage emulsion by ultrasonic treatment.

10 To date, sausage emulsions have been stuffed into sausage casings, then heated for stabilization, possibly simultaneously smoked or introduced directly into a hot water bath.

15 The raw products treated in this manner exhibit a not inconsiderable production loss inter alia of protein, flavour substances and fat. The further packaging manipulations required after the heating operation promote recontamination of the semifinished goods. To increase the shelf life, the products must frequently be additionally pasteurized in the transport packages  
20 or end-user packages.

DD patent 2009 70 discloses a process for stuffing moulding boxes for skinless sausage, which is concerned with avoiding air inclusions in scalded-emulsion sausage  
25 emulsion during filling or stuffing of the cartridges. The emulsion is introduced according to known teaching into the cartridge by shaking movements, vibrations in the ultrasonic region being described as preferred.

30 German laid-open application DE 29 50 384 A1 discloses a process and an apparatus for treating foods with energy of ultrasonic frequency. In detail, it is described there that the process of cooking material to be cooked is based on disintegrating the fibre structure and  
35 breaking down the enzymes of the material to be cooked and, in association therewith, on a mechanical cooking process which is based on the heat of friction in the material to be cooked. It is also explained that the action of ultrasonic energy modifies the material to be

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cooked in the sense of a coagulation. However, it is fundamentally assumed in DE 29 50 384 A1 that the material to be cooked, in addition to the treatment with purely thermal energy, is to be treated with  
5 ultrasound, in order to optimize the cooking process. Cooking in this context means that the entire material to be cooked is to be subjected to the corresponding process over the entire volume. Any impetus to develop an independent skin to stabilize the shape of individual  
10 raw goods by the action of ultrasonic energy, in particular to increase the intermediate stability of a semifinished product, is not given by DE 29 50 384 A1.

From the aforesaid, it is an object of the invention to  
15 specify a process for solidifying the surface of raw sausage emulsion, for example raw scalded-emulsion sausage, raw cooked-meat sausage or raw raw-sausage emulsion, by ultrasonic treatment, in which case the treatment is to stabilize the shape of the individual  
20 raw goods and simultaneously it is necessary to avoid the raw product from adhering in an undesired manner to the treatment means.

By means of the process, a natural stabilizing and  
25 semi-protective layer is to be formed on the surface of the emulsion, so that in the case of, for example, raw sausages, a gut casing can be avoided and subsequent product ripening is also possible. Also, the process is to ensure the said prior stabilization for such  
30 products which are subjected to a later heat treatment or high-pressure treatment.

The object of the invention is achieved by a process according to the definition of Patent Claim 1, the  
35 subclaims being at least expedient embodiments and developments.

According to the invention, the raw sausage emulsion prepared in a conventional manner is first subjected to

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a degassing treatment, for example by evacuation. Subsequently thereto there is direct contacting of the raw product with the surface of one or more ultrasonic sonotrodes, at least one of the ultrasonic sonotrodes  
5 being heated, that is to say having an inherent temperature which is higher than that which is due to process-related heat development.

Preferably, in the context of continuous treatment,  
10 tubular hollow sonotrodes are used, with, at any rate, the use of sonotrodes which are shaping, with respect to the product, also being conceivable. The treatment surface of the sonotrodes can have an adhesion-minimizing microstructure.

15 The ultrasonic energy which is applied to the raw product has a low frequency, but a high vibrational amplitude, preferably the frequency range between 16 and 50 kHz being employed at an amplitude of the ultrasonic  
20 vibrations in the range of essentially 5 to 50  $\mu\text{m}$ .

The molecules of the raw product which are exposed to ultrasonic energy are induced by the treatment into their normal mode of vibration, which produces  
25 frictional heat. As a result, the protein on the product surface coagulates and the desired continuous independent skin forms. The combined treatment by using a heated ultrasonic sonotrode can achieve the desired effect in an optimum manner without, as would otherwise  
30 be customary, very high ultrasonic powers in the kW range being necessary.

The depth of penetration of the ultrasonic waves into the material to be treated, which is a mixture of protein, fat, water, salts and spices, is small, so that  
35 unwanted cooking right through the material is excluded.

The result of the treatment is that, during flow through a tube, which is subjected to ultrasonic

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vibrations and acts as sonotrode, protein denaturation is initiated at the surface of sausage emulsion, the uniformity of the stabilizing independent skin formation being improved by sausage emulsion which is substantially free from air inclusions and by heating the sonotrodes beyond the self-heating occurring during operation.

At the sonotrode inlet, liquid can be applied to the sausage emulsion surface for affecting flavour or colouring by means of, for example, an annular nozzle. The ultrasound causes a fine and uniform distribution of the liquid on the coagulating edge layer. By this means, a subsequent flavouring (for example by smoke) or colouring post-treatment can be dispensed with, or its effect can be optimized.

However, it is also possible that the sausage emulsion stream which is solidified in such a manner is cooled and packed at the sonotrode outlet or else is subjected to a further processing or treatment, for example by liquid smoke or similar flavourings or decorations.

In one embodiment, the sausage emulsion can also be stuffed into releasable moulds which are subjected to mechanical vibrations by coupled sonotrodes.

After the surface treatment which has been completed in the above manner, a further treatment, as described, can be performed, in which case it is possible to store the raw products temporarily in the frozen state or to carry out final heat and/or high-pressure treatment immediately subsequently. In contrast to the known process, the otherwise unavoidable loss of protein, fat, flavourings etc. is decreased and the product quality is increased. At the same time, a reduction in the flow-through times in continuous production can be achieved, so that a reduction in cost is also achieved from the technological aspect. The risk of

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- recontamination by the necessary packaging manipulation after pasteurization is excluded in the process described. By using the shaping sonotrodes mentioned, any conceivable product configuration or product shape is achievable. In the event that the emulsion for raw Bratwurst is given, for example, a ring shape or a helical shape, this shape is retained and the individual layers of the emulsion do not stick to one another.
- 10 As a result of the surface treatment of raw-sausage emulsion, the otherwise necessary shape-stabilizing gut casing can be dispensed with, so that the processability is improved and subsequent ripening is also possible.
- 15 The invention is to be described in more detail with reference to an example.

Wiener emulsion was removed from the cutter at a temperature of essentially 8°C and, for further degassing, passed through a stuffing mincer. The feed stream of the emulsion strand was then conducted through coupled tubular hollow sonotrodes which were directly connected to the stuffing horn of the transport system. Via the feed stream the pressure in the hollow sonotrode pipe flow may be set, which demonstrates that, at a higher pressure, the input or transfer of ultrasonic energy to the raw product increased.

Heating one of the hollow sonotrodes improved homogeneity of the independent skin formation on the surface of the exiting emulsion strand, in which case the feed stream could be set to approximately 110 l/h. The denaturation occurring penetrated into the sausage emulsion to about 1 mm below the surface.

35 The sausage emulsion stream was then divided transversely, the sections being transferred to a perforated sheet. Unwanted adhesion of the divided sausage emulsion stream to plastic or metal surfaces was not observed. Adjacently placed sausages were, without later adhesion,

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placed into plastic pouches under reduced pressure and heated to 78°C.

In addition, it has been successfully demonstrated that processing the solidified surface of the sausage emulsion by spraying with liquid smoke is possible and browning is achievable.

In one embodiment of the hollow sonotrodes, these were surrounded on the exterior with a heating mat, a surface temperature in the region of approximately 140°C having been recorded. A uniform independent skin formation occurred even at a low ultrasonic power of essentially 200 W. At a feed rate of approximately 100 l/h, the specific energy input required for independent skin formation is essentially 7 kJ/kg of ultrasonic energy and 9 kJ/kg of thermal energy.

Switching off the ultrasound during the stuffing process with simultaneous intensive heating of the sonotrodes, with some sausage emulsion compositions, did not lead, as expected, to an immediate adhesion of the protein to the sonotrode interior surface.

It can be deduced from this surprising finding that the ultrasound action is primarily preventing the previously unavoidable adhesion to the hot sonotrode interior surface during the heating process. It can be deduced from this finding that ultrasound serves especially during the initial phase to decrease the frictional resistance on the interior surface of the heated sonotrodes, while in the running process the exiting fats and liquids reduce or completely prevent adhesion. If production interruptions occur, the flow of material can be reactivated by turning on the ultrasound.

Decreasing the frictional resistance by adhesion-minimizing microstructures on the sonotrode interior surface can further minimize the use of ultrasound, more precisely both from the aspects of time and

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energy. However, it must be emphasized that, owing to the tendency of the sausage emulsion to adhere to the heated sonotrode interior surface in a varying composition-dependent manner, use of ultrasound is  
5 indispensable.

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## Patent claims

1. Process for solidifying the surface of raw sausage  
5 emulsions or raw sausages by ultrasonic treatment  
having the following steps in the course of a  
continuous process:
- substantial degassing of the raw product;
  - direct contacting of the raw product with the  
10 surface of one or more ultrasonic sonotrodes, at  
least one of the ultrasonic sonotrodes being heated  
to achieve a uniform denaturation layer;
  - formation of a thin, sealed, shape-stabilizing  
15 independent coagulation skin on the surface of the  
raw product by at least temporary action of ultra-  
sonic energy in the low frequency range, but with  
high vibrational amplitude and transfer of the raw  
product to further processing or packaging.
2. Process according to Claim 1, characterized in that  
20 the raw product is conducted through tubular hollow  
sonotrodes under pressure.
3. Process according to Claim 1, characterized in that  
shaping sonotrodes are used.
4. Process according to one of the preceding claims,  
25 characterized in that the raw product is subjected  
to a synchronous treatment with liquid smoke or  
other flavourings or decorations.
5. Process according to one of Claims 1 to 3, charac-  
terized in that the raw product is subjected to a  
30 downstream treatment with liquid smoke or other  
flavourings or decorations.
6. Process according to Claim 1, characterized in that  
the raw product is evacuated, for degassing, prior  
to the ultrasonic treatment.
- 35 7. Process according to one of Claims 2 to 6, charac-  
terized in that the surface of the sonotrode to be  
contacted with the raw product has an adhesion-  
minimizing microstructure or a structured coating of  
this type.

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## Abstract

The invention relates to a process for solidifying the surface of raw sausage emulsion using ultrasound treatment and/or an adhesion-minimizing microstructure on the sonotrode interior surface while it is being transported, with, in the course of a continuous process, a substantial degassing of the raw product first being carried out. Subsequently, there is a direct contacting of the raw product with the surface of one or more ultrasonic sonotrodes, at least one of the ultrasonic sonotrodes being heated. As a result of the treatment, a thin, sealed, shape-stabilizing independent coagulation skin forms on the surface of the raw product. The ultrasonic energy is in the low frequency range, but has a high vibrational amplitude.

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# Declaration and Power of Attorney for Patent Application

## Erklärung für Patentanmeldungen mit Vollmacht

### German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

As a below named inventor, I hereby declare that:

daß mein Wohnsitz, meine Postanschrift und meine Staatsangehörigkeit den im nachstehenden nach meinem Namen aufgeführten Angaben entsprechen, daß ich nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent für die Erfindung mit folgendem Titel beantragt wird:

My residence, post office address and citizenship are as stated next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

METHOD FOR HARDENING THE SURFACE OF

SAUSAGE MEAT USING ULTRASONIC TREATMENT

deren Beschreibung:

the specification of which:

☐ ist beigefügt

☐ is attached hereto.

☐ wurde angemeldet am \_\_\_\_\_

☒ was filed on April 19, 2001

unter der US-Anmeldenummer oder unter der Internationalen Anmeldenummer im Rahmen des Vertrags über die Zusammenarbeit auf dem Gebiet des Patentwesens (PCT)

as United States Application Number or PCT International Application Number

\_\_\_\_\_ und am

09/807,412 and was amended on

\_\_\_\_\_ abgeändert (falls zutreffend).

\_\_\_\_\_ (if applicable).

Ich bestätige hiermit, daß ich den Inhalt der oben angegebenen Patentanmeldung, einschließlich der Ansprüche, die eventuell durch einen oben erwähnten Zusatzantrag abgeändert wurde, durchgesehen und verstanden habe.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

Ich erkenne meine Pflicht zur Offenbarung jeglicher Informationen an, die zur Prüfung der Patentfähigkeit in Einklang mit Titel 37, Code of Federal Regulations, § 1.56 von Belang sind.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

## German Language Declaration

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäß Title 35, US-Code, § 119(a)-(d), bzw. § 365(b) aller unten aufgeführten Auslandsanmeldungen für Patente oder Erfinderurkunden, oder § 365(a) aller PCT internationalen Anmeldungen, welche wenigstens ein Land ausser den Vereinigten Staaten von Amerika benennen, und habe nachstehend durch ankreuzen sämtliche Auslandsanmeldungen für Patente bzw. Erfinderurkunden oder PCT internationale Anmeldungen angegeben, deren Anmeldetag dem der Anmeldung, für welche Priorität beansprucht wird, vorangeht.

Prior foreign application(s)  
(Frühere ausländische Anmeldungen)

<u>198 49 357.6</u>	<u>GERMANY</u>
(Number)	(Country)
(Nummer)	(Land)
(Number)	(Country)
(Nummer)	(Land)

I hereby claim foreign priority under Title 35, United States Code, § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below, and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Priority claimed

Priorität  
beansprucht

19 October 1998  
(Day/Month/Year Filed)  
(Tag/Monat/Jahr der Anmeldung)

<input checked="" type="checkbox"/>	<input type="checkbox"/>
Yes	No
Ja	Nein
<input type="checkbox"/>	<input type="checkbox"/>
Yes	No
Ja	Nein

(Day/Month/Year Filed)  
(Tag/Monat/Jahr der Anmeldung)

Ich Beanspruche hiermit Prioritätsvorteile unter Title 35, US-Code, § 119(e) aller US-Hilfsanmeldungen wie unten aufgezählt.

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

(Application No.)  
(Aktenzeichen)

(Filing Date)  
(Anmeldetag)

(Application No.)  
(Aktenzeichen)

(Filing Date)  
(Anmeldetag)

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PCT/EP99/07750  
(Application No.)  
(Aktenzeichen)

14 October 1999  
(Filing Date)  
(Anmeldetag)

(Status) (patented, pending, abandoned)  
(Status) (patentiert, schwebend, aufgegeben)

(Application No.)  
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# German Language Declaration

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